What is claimed is:

1. An information processing apparatus characterized by comprising:

command transmission means for transmitting a command for requesting for a response to a receiving apparatus after authentication data is generated in accordance with shared data shared with said receiving apparatus;

authentication means for authenticating said receiving apparatus in accordance with an expected value generated based on said shared data and said authentication data generated at said receiving apparatus;

measurement means for measuring a response time taken by said receiving apparatus to respond to said command; and

judgment means for judging whether data transmission to said receiving apparatus is granted or not, in accordance with an authentication result by said authentication means and the response time measured by said measurement means.

2. The information processing apparatus recited in claim 1, wherein:

said command transmission means transmits said command a maximum of N times to judge whether the data transmission is granted or not; and

said authentication means authenticates said receiving apparatus in accordance with said authentication data corresponding to a transmission sequence of said command and a corresponding one of said expected value.

3. An information processing method characterized by comprising:

a command transmission step of transmitting a command for requesting for a response to a receiving apparatus after authentication data is generated in accordance with shared data shared with said receiving apparatus,;

an authentication step of authenticating said receiving apparatus in

accordance with an expected value generated based on said shared data and said authentication data generated at said receiving apparatus;

a measurement step of measuring a response time taken by said receiving apparatus to respond to said command; and

a judgment step of judging whether data transmission to said receiving apparatus is granted or not, in accordance with an authentication result by said authentication step and the response time measured at said measurement step.

4. A recording medium recording a program readable by a computer, the program characterized by comprising:

a command transmission control step of controlling transmission of a command for requesting for a response to a receiving apparatus after authentication data is generated in accordance with shared data shared with said receiving apparatus;

an authentication control step of controlling authentication of said receiving apparatus in accordance with an expected value generated based on said shared data and said authentication data generated at said receiving apparatus;

a measurement control step of controlling measurement a response time taken by said receiving apparatus to respond to said command; and

a judgment control step of controlling judgment whether data transmission to said receiving apparatus is granted or not, in accordance with an authentication result by said authentication control step and the response time measured at said measurement control step.

5. A program for making a computer execute a process, the process characterized by comprising:

a command transmission control step of controlling transmission of a

command for requesting for a response to a receiving apparatus after authentication data is generated in accordance with shared data shared with said receiving apparatus;

an authentication control step of controlling authentication of said receiving apparatus in accordance with an expected value generated based on said shared data and said authentication data generated at said receiving apparatus;

a measurement control step of controlling measurement a response time taken by said receiving apparatus to respond to said command; and

a judgment control step of controlling judgment whether data transmission to said receiving apparatus is granted or not, in accordance with an authentication result by said authentication control step and the response time measured at said measurement control step.

6. An information processing apparatus capable of communicating with a transmitting apparatus which judges whether data transmission is granted or not, in accordance with an authentication result based on authentication data generated from shared data shared with said transmitting apparatus and a response time to a predetermined command from said transmitting apparatus, the information processing apparatus characterized by comprising:

authentication data generation means for generating said authentication data by subjecting said shared data to a predetermined process, before said command is transmitted from said transmitting apparatus;

response message generation means for generating a response message to said command before said command is transmitted from said transmitting apparatus, said response message including said authentication data generated by said authentication data generation means; and

transmission means for transmitting said response message to said

transmitting apparatus when said command transmitted from said transmitting apparatus is received.

7. The information processing apparatus recited in claim 6, characterized in that:

said shared data is a quasi random number;

said quasi random number is transmitted from said transmitting apparatus before said command is transmitted; and

said authentication data generation means subjects said quasi random number to a Keyed-Hash process and a resultant Hash value is used as said authentication data.

8. The information processing apparatus recited in claim 7, characterized in that:

said authentication data generation means executes a Keyed-Hash process relative to said quasi random number and information specific to the information processing apparatus and uses a resultant Hash value as said authentication data.

9. The information processing apparatus recited in claim 6, characterized in that:

if said command is transmitted from said transmitting apparatus a maximum of N times to judge whether data transmission is granted or not;

said authentication data generation means executes said process relative to said shared data before a first one of said command is transmitted from said transmitting apparatus and generates N sets of said authentication data corresponding to N sets of said command to be transmitted; and

said transmission means transmits said response message generated by said response message generation means to said transmitting apparatus in such a manner that N sets of said authentication data are supplied to said transmitting

apparatus in a sequence agreed beforehand with said transmitting apparatus.

10. The information processing apparatus recited in claim 9, characterized in that:

said authentication data generation means divides the data obtained by subjecting said shared data to said process into a plurality of data pieces and generates N sets of said authentication data from the divided data.

11. The information processing apparatus recited in claim 9, characterized in that:

said authentication data generation means generates N sets of said authentication data from data obtained at each process of repetitively executing said process relative to said shared data.

12. The information processing apparatus recited in claim 6, characterized in that:

when said command from said transmitting apparatus is received, said transmission means transmits a response message to said transmitting apparatus, said response message containing new authentication data generated from said authentication data and information contained in said command.

13. An information processing method for an information processing apparatus capable of communicating with a transmitting apparatus which judges whether data transmission is granted, in accordance with an authentication result based on authentication data generated from shared data shared with said transmitting apparatus and a response time to a predetermined command from said transmitting apparatus, the information processing method characterized by comprising:

an authentication data generation step of generating said authentication data by subjecting said shared data to a predetermined process, before said command is transmitted from said transmitting apparatus;

a response message generation step of generating a response message to said command before said command is transmitted from said transmitting apparatus, said response message including said authentication data generated by a process at said authentication data generation step; and

a transmission step of transmitting said response message to said transmitting apparatus when said command transmitted from said transmitting apparatus is received.

14. A recording medium recording a program readable by a computer for communicating with a transmitting apparatus which judges whether data transmission is granted, in accordance with an authentication result based on authentication data generated from shared data shared with said transmitting apparatus and a response time to a predetermined command from said transmitting apparatus, the program characterized by comprising:

an authentication data generation control step of controlling generation of said authentication data by subjecting said shared data to a predetermined process, before said command is transmitted from said transmitting apparatus;

a response message generation control step of controlling generation of a response message to said command before said command is transmitted from said transmitting apparatus, said response message including said authentication data generated by a process at said authentication data generation step; and

a transmission control step of controlling transmission of said response message to said transmitting apparatus when said command transmitted from said transmitting apparatus is received.

15. A program for making a computer execute a process and communicating with a

transmitting apparatus which judges whether data transmission is granted, in accordance with an authentication result based on authentication data generated from shared data shared with said transmitting apparatus and a response time to a predetermined command from said transmitting apparatus, the program characterized by comprising:

an authentication data generation control step of controlling generation of said authentication data by subjecting said shared data to a predetermined process, before said command is transmitted from said transmitting apparatus;

a response message generation control step of controlling generation of a response message to said command before said command is transmitted from said transmitting apparatus, said response message including said authentication data generated by a process at said authentication data generation step; and

a transmission control step of controlling transmission of said response message to said transmitting apparatus when said command transmitted from said transmitting apparatus is received.

16. An information processing apparatus characterized by comprising:

authentication data generation means for generating command authentication data and response expected value data from shared data shared with a receiving apparatus;

command transmission means for transmitting a command for requesting for a response to said receiving apparatus, said command containing said command authentication data;

response reception means for receiving a response to said command from said receiving apparatus;

authentication means for authenticating said receiving apparatus in

accordance with said response expected value and said response authentication data contained in said response received from said receiving apparatus;

measurement means for measuring a response time taken by said receiving apparatus to respond to said command; and

judgment means for judging whether data transmission to said receiving apparatus is granted or not, in accordance with an authentication result by said authentication means and the response time measured by said measurement means.

17. The information processing apparatus recited in claim 16, characterized in that:

said command transmission means transmits said command a maximum of k times to judge whether data transmission is granted; and

said authentication means authenticates said receiving apparatus in accordance with said authentication data corresponding to a transmission sequence of said command and a corresponding one of said expected value.

18. An information processing method characterized by comprising:

an authentication data generation step of generating command authentication data and response expected value data from shared data shared with a receiving apparatus;

a command transmission step of transmitting a command for requesting for a response to said receiving apparatus, said command containing said command authentication data;

a response reception step of receiving a response to said command from said receiving apparatus;

an authentication step of authenticating said receiving apparatus in accordance with said response expected value and response authentication data

contained in said response received from the receiving apparatus;

a measurement step of measuring a response time taken by said receiving apparatus to respond to said command; and

a judgment step of judging whether data transmission to said receiving apparatus is granted or not, in accordance with an authentication result by said authentication step and said response time measured by said measurement step.

19. A recording medium recording a program readable by a computer, the program characterized by comprising:

an authentication data generation step of generating command authentication data and response expected value data from shared data shared with a receiving apparatus;

a command transmission step of transmitting a command for requesting for a response to said receiving apparatus, said command containing said command authentication data;

a response reception step of receiving a response to said command from said receiving apparatus;

an authentication step of authenticating said receiving apparatus in accordance with said response expected value and said response authentication data contained in said response received from said receiving apparatus;

a measurement step of measuring a response time taken by said receiving apparatus to respond to said command; and

a judgment step of judging whether data transmission to said receiving apparatus is granted or not, in accordance with an authentication result by said authentication step and the response time measured by said measurement step.

20. A program for making a computer execute a process, the process characterized

by comprising:

an authentication data generation step of generating command authentication data and response expected value data from shared data shared with a receiving apparatus;

a command transmission step of transmitting a command for requesting for a response to said receiving apparatus, said command containing said command authentication data;

a response reception step of receiving a response to said command from said receiving apparatus;

an authentication step of authenticating said receiving apparatus in accordance with said response expected value and said response authentication data contained in said response received from said receiving apparatus;

a measurement step of measuring a response time taken by said receiving apparatus to respond to said command; and

a judgment step of judging whether data transmission to said receiving apparatus is granted or not, in accordance with an authentication result by said authentication step and the response time measured by said measurement step.

21. An information processing apparatus capable of communicating with a transmitting apparatus which judges whether transmission of transmission data is granted or not, in accordance with a response time to a predetermined command, the information processing apparatus characterized by comprising:

generation means for generating, from shared data shared with said transmitting apparatus, command expected value data and response authentication data respectively corresponding to authentication data of said command generated at said transmitting apparatus from said shared data;

authentication means for authenticating said transmitting apparatus in

accordance with authentication data of said command contained in said command and said command expected value data generated by said generation means, when said command transmitted from said transmitting apparatus is received; and

transmission means for transmitting a response containing said response authentication data to said transmitting apparatus, in accordance with an authentication result by said authentication means.

22. An information processing method for an information processing apparatus capable of communicating with a transmitting apparatus which judges whether transmission of transmission data is granted or not, in accordance with a response time to a predetermined command, the information processing method characterized by comprising:

a generation step of generating, from shared data shared with said transmitting apparatus, command expected value data and response authentication data respectively corresponding to authentication data of said command generated at said transmitting apparatus from said shared data;

an authentication step of authenticating said transmitting apparatus in accordance with authentication data of said command contained in said command and said command expected value data generated by a process of said generation step, when said command transmitted from said transmitting apparatus is received; and

a transmission step of transmitting a response containing said response authentication data to said transmitting apparatus, in accordance with an authentication result by a process of said authentication step.

23. A recording medium recording a program readable by a computer, the program for information processing of an information processing apparatus capable of communicating with a transmitting apparatus which judges whether transmission of

transmission data is granted, in accordance with a response time to a predetermined command, the program characterized by comprising:

a generation step of generating, from shared data shared with said transmitting apparatus, command expected value data and response authentication data respectively corresponding to authentication data of said command generated at said transmitting apparatus from said shared data;

an authentication step of authenticating said transmitting apparatus in accordance with authentication data of said command contained in said command and said command expected value data generated by a process of said generation step, when said command transmitted from said transmitting apparatus is received; and

a transmission step of transmitting a response containing said response authentication data to said transmitting apparatus, in accordance with an authentication result by a process of said authentication step.

24. A program for making a computer execute a process, the program for information processing of an information processing apparatus being capable of communicating with a transmitting apparatus which judges whether transmission of transmission data is granted or not, in accordance with a response time to a predetermined command, the process characterized by comprising:

a generation step of generating, from shared data shared with said transmitting apparatus, command expected value data and response authentication data respectively corresponding to authentication data of said command generated at said transmitting apparatus from said shared data;

an authentication step of authenticating said transmitting apparatus in accordance with authentication data of said command contained in said command and said command expected value data generated by a process of said generation step, when said command transmitted from said transmitting apparatus is received; and

a transmission step of transmitting a response containing said response authentication data to said transmitting apparatus, in accordance with an authentication result by a process of said authentication step.